How to decrease the CO_2 contribution due to cars

Leonardo Sala, 22/11/2021

Executive summary

Description of the issue

Relevance and value of the issue

Presentation of the dataset

Indicators/aggregates you will build based on these datasets

Presentation of the way you will interpret the indicators / aggregates

Business conclusion

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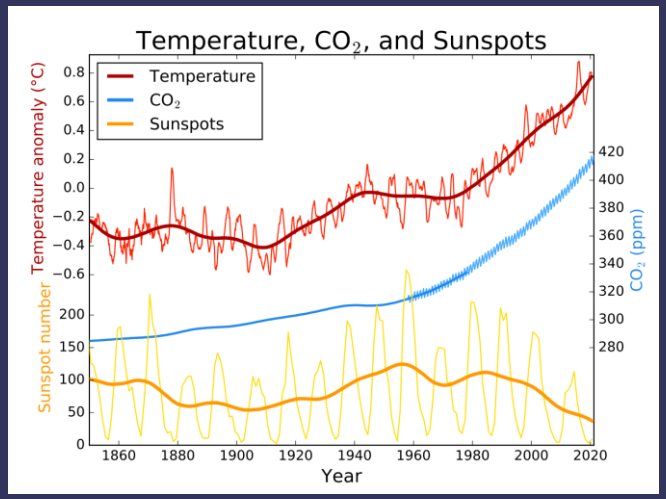
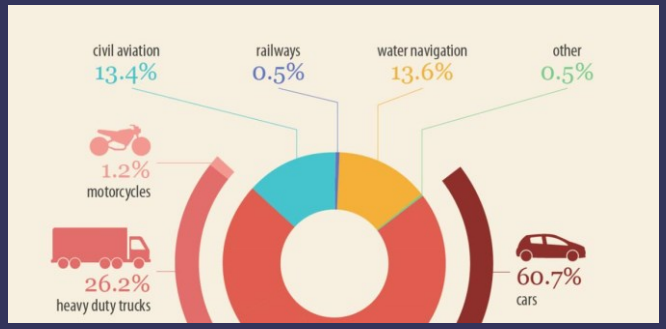
Pain Point

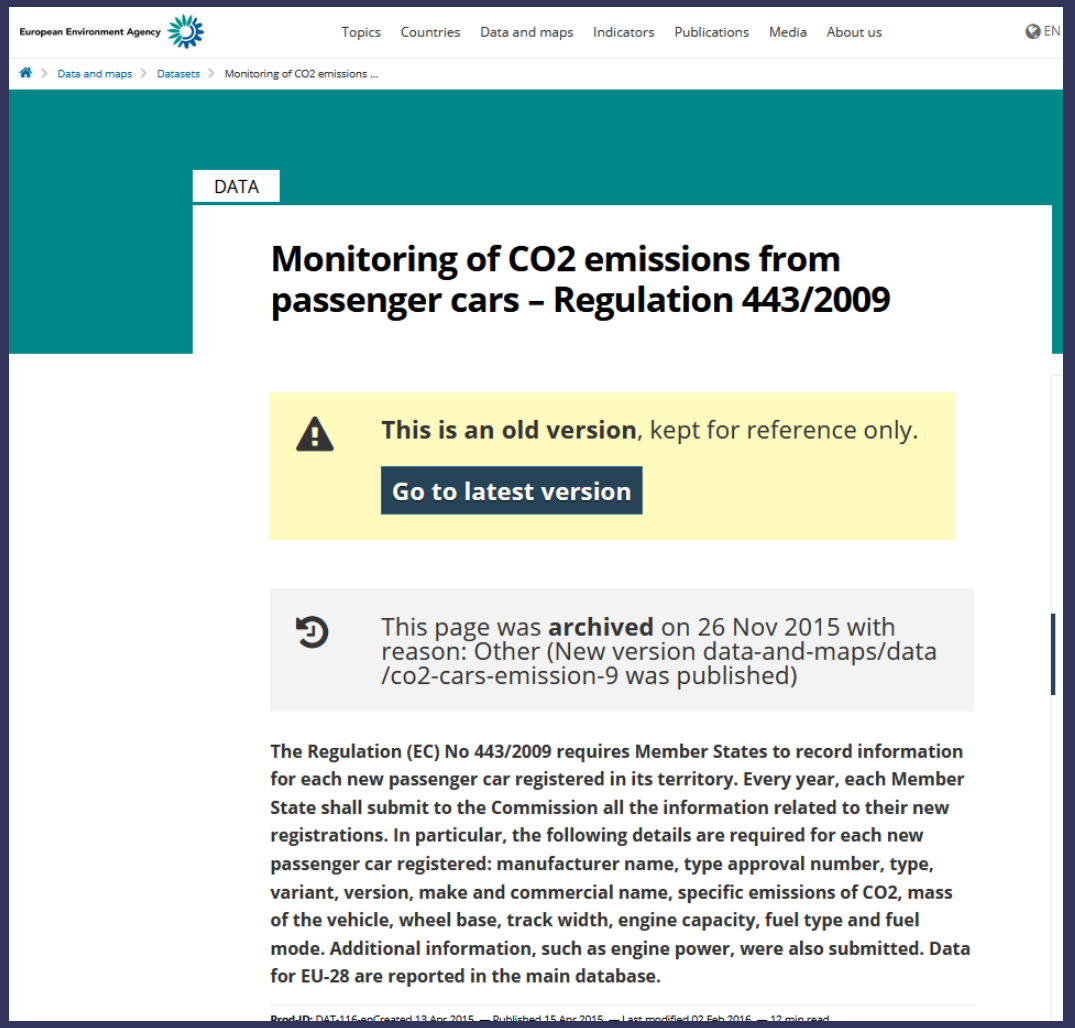
- CO2 emissions are tightly correlated to the earth temperature increase
- AND cars are by far the largest contributor
- So, what is the action to take to reduce the cars' impact ?





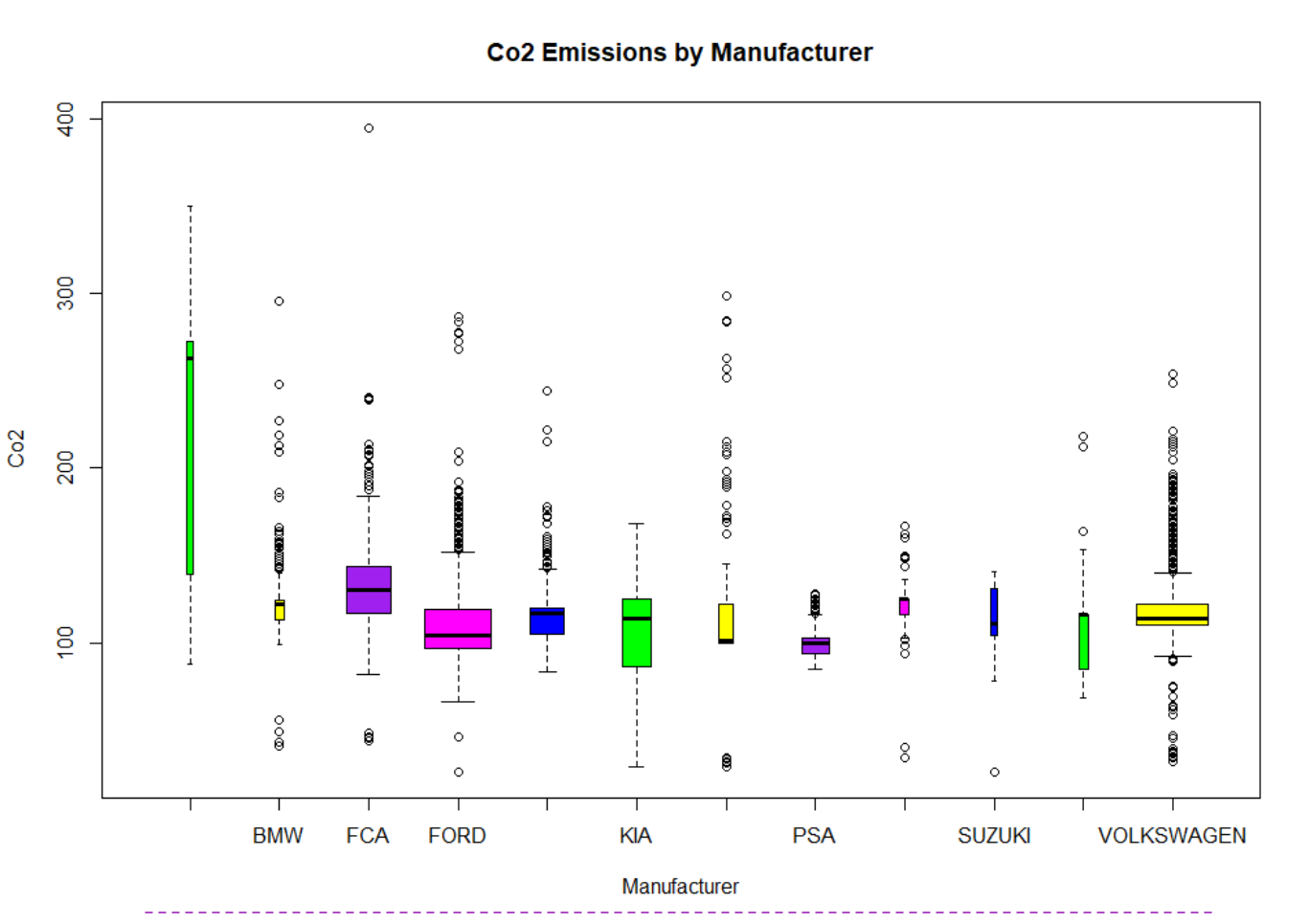
Dataset presentation

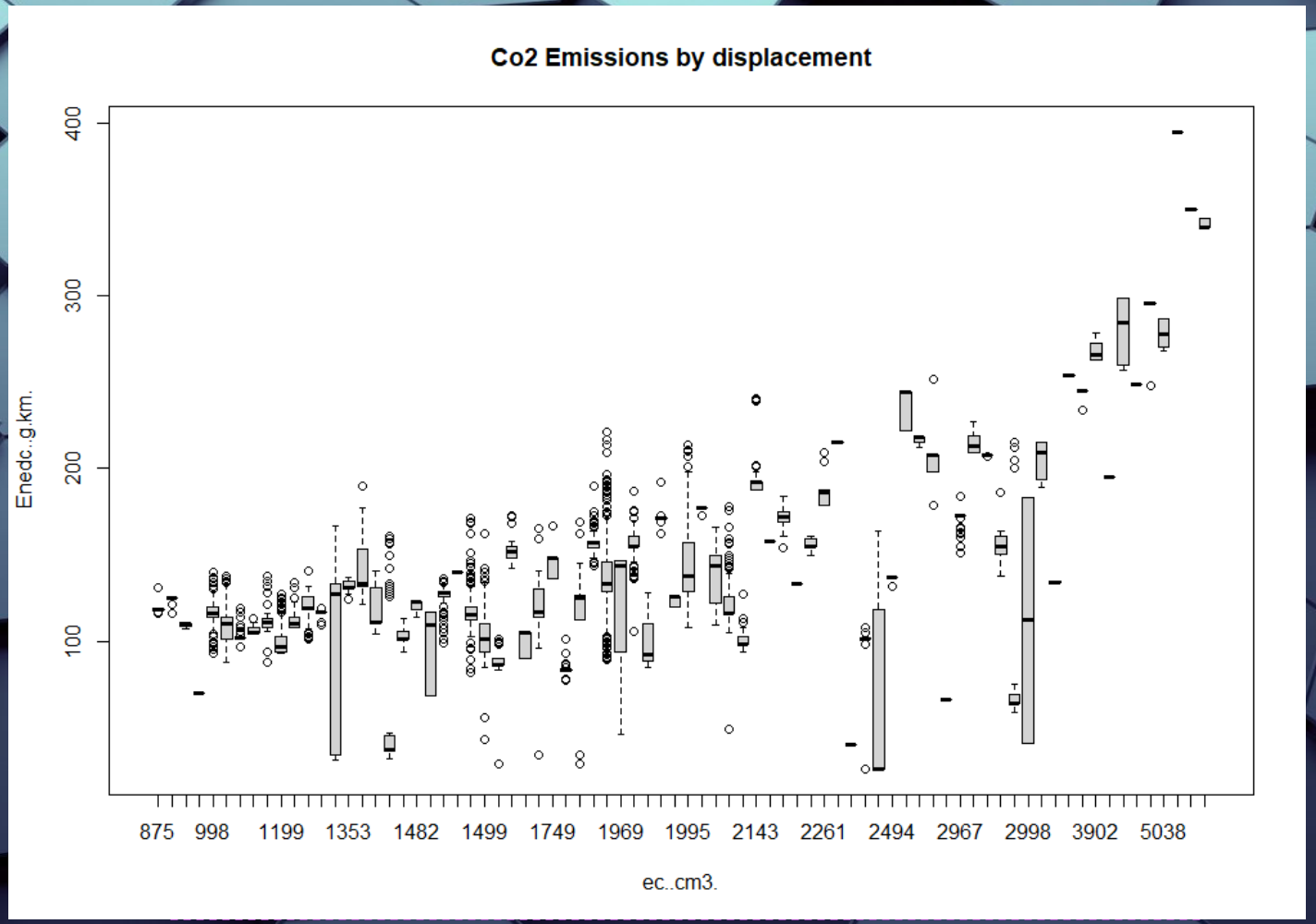
- **Monitoring of CO2 emissions from passenger cars – Regulation 443/2009**
- *European Environment Agency*
- Regulation (EC) No. 443/2009 requires Member States to record information for each new passenger car registered in its territory. Every year, each Member State shall submit to the Commission all the information related to their new registrations. In particular, the following details are required for each new passenger car registered: manufacturer's name, type approval number, type, variant, version, make and commercial name, specific emissions of CO2, mass of the vehicle, wheel base, track width, engine capacity, fuel type and fuel mode. Additional information, such as engine power, were also submitted.
- http://www.eea.europa.eu/data-and-maps/data/co2-cars-emission-8
- TRANSPORT – CAR – ENVIRONMENT – REGULATION



Co2 Production by manufacturer

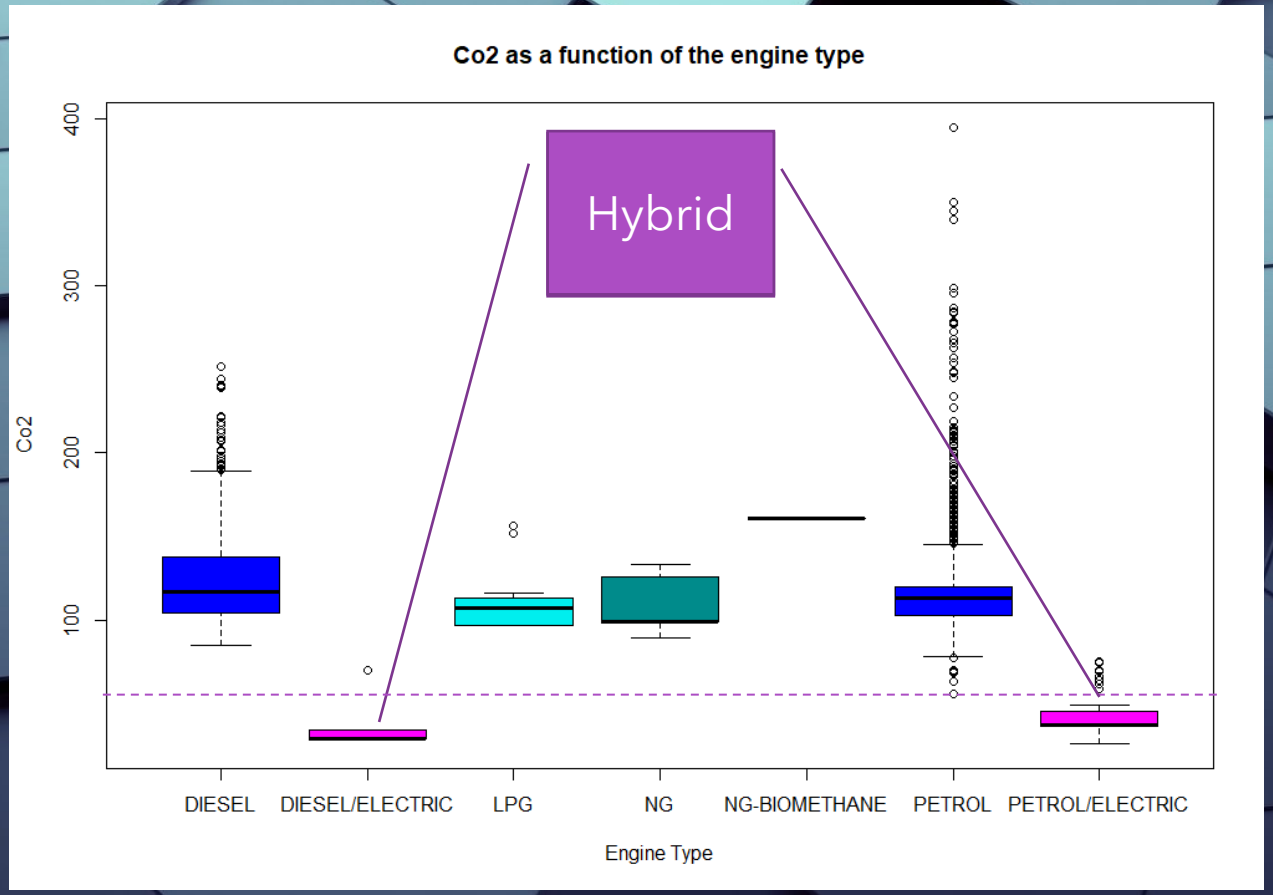
- No significant correlation has been found between car manufacturers and CO2 emissions





Co2 Production by manufacturer

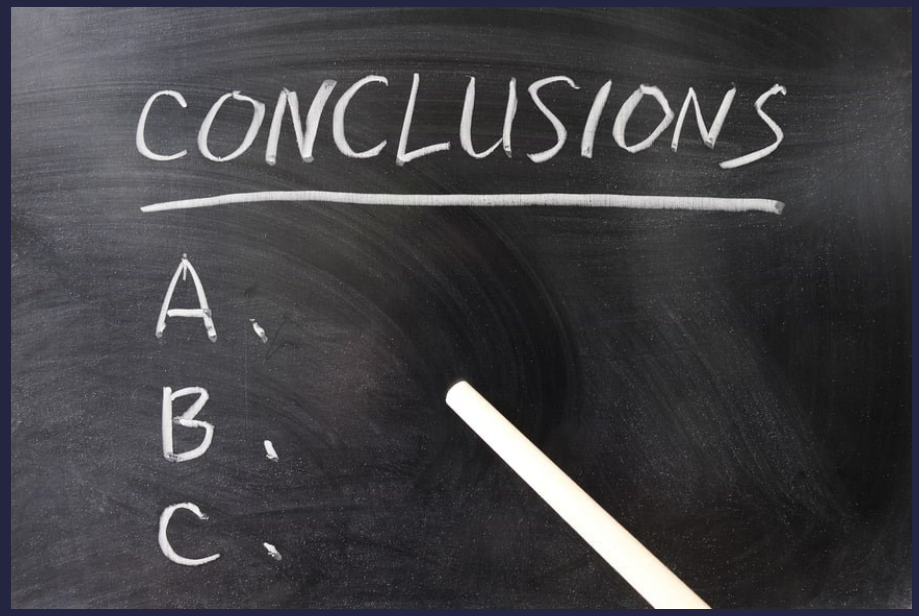
- A weak dependency has been between the car displacement and the Co2 emissions
- Nevertheless, the dependency only emerges for displacements bigger than 2k
- Below that thresholds that doesn't show up



CO2 Production in European cars 2020

- The most plausible candidate to explain/predict the Co2 production seems to be the engine type
- The Hybrid types clearly showing an advantage over the others
- There appear to be almost a 3X reduction of CO2 emissions (from 120 to 40) from the adoption of a hybrid type of engine

Conclusions



Recommendations

The legislators should definitively speed up the adoption of hybrid vehicles and the phase-out of the other types

Not only that would bring tangible benefits to the owners (reduced maintenance cost in brakes, reduced cost of ownerships, …)

But this is a key decision towards been able to dramatically mitigate the increase of earth temperature